

Figure 1a

Figure 1b
(Prior Art)

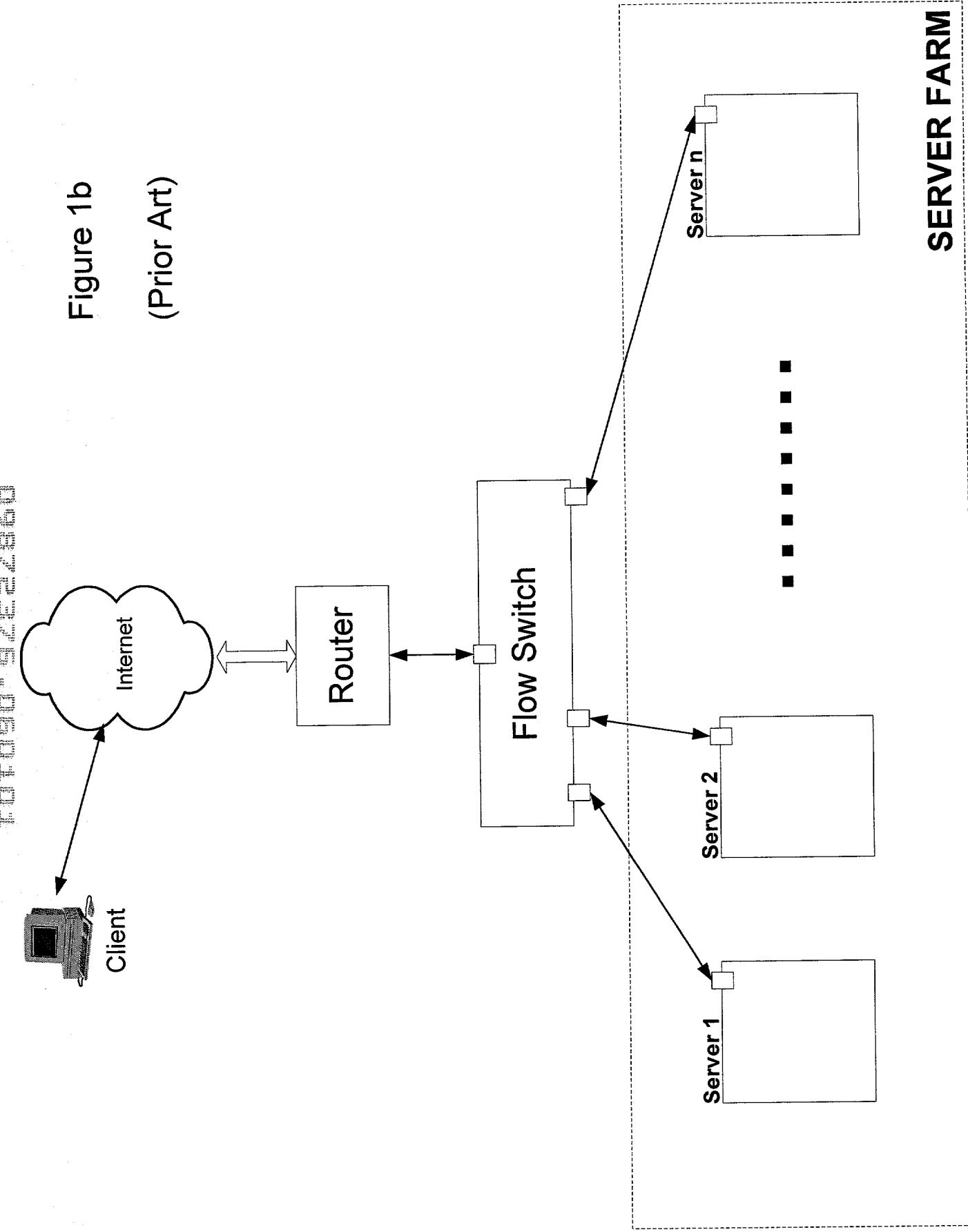
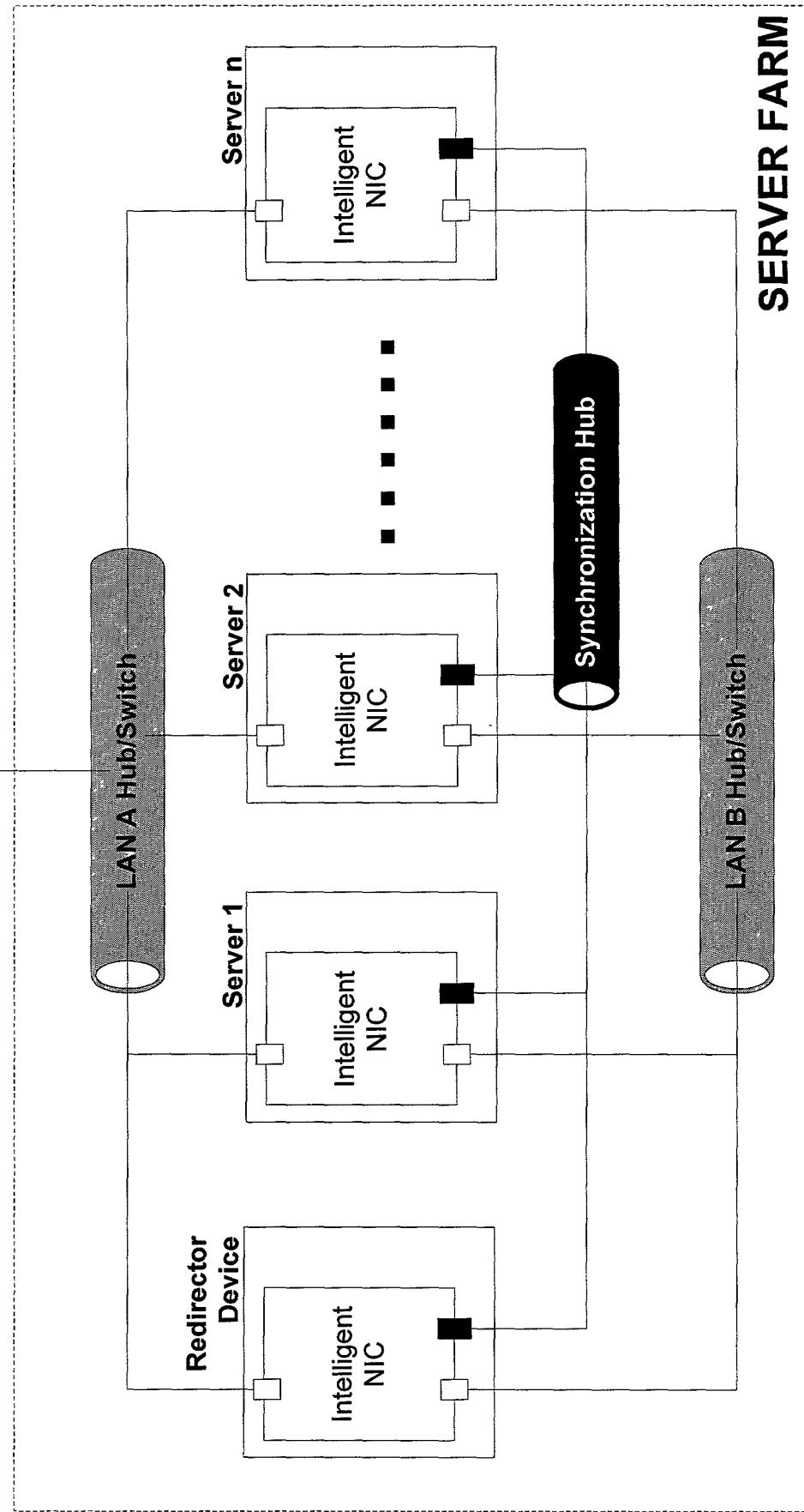
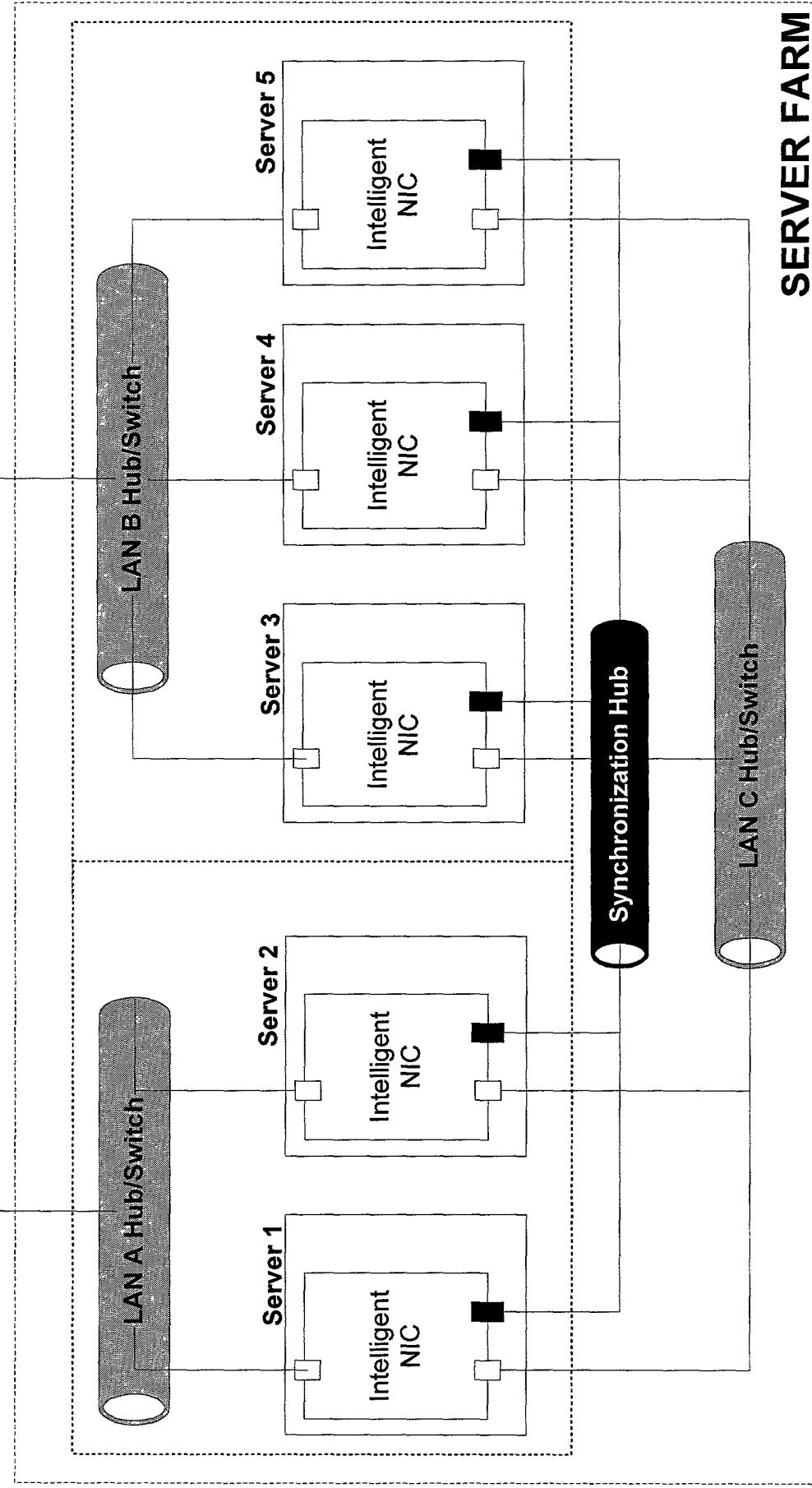


Figure 2a



Internet Connection (e.g., ISP1) Internet Connection (e.g., ISP2)

Figure 2b



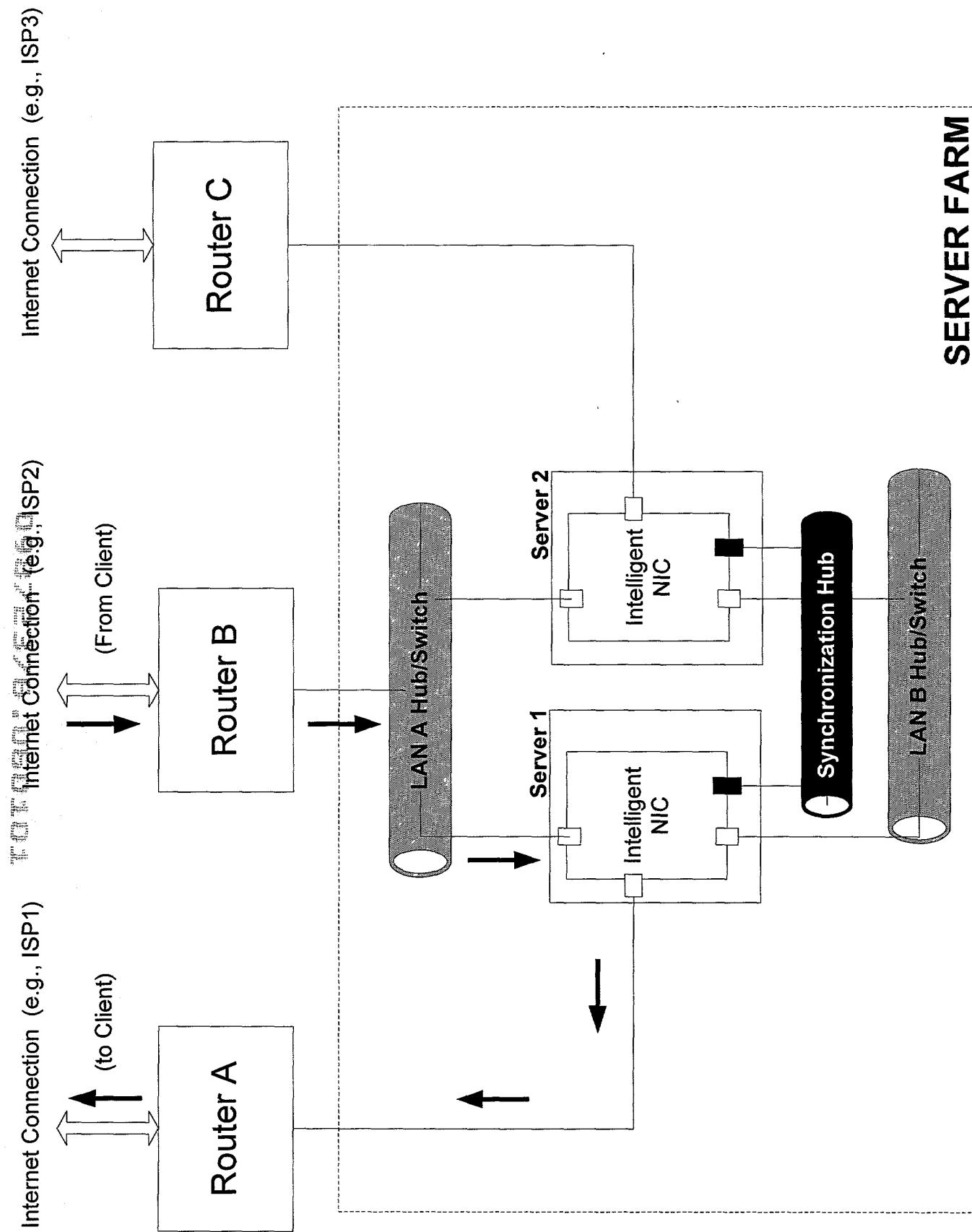
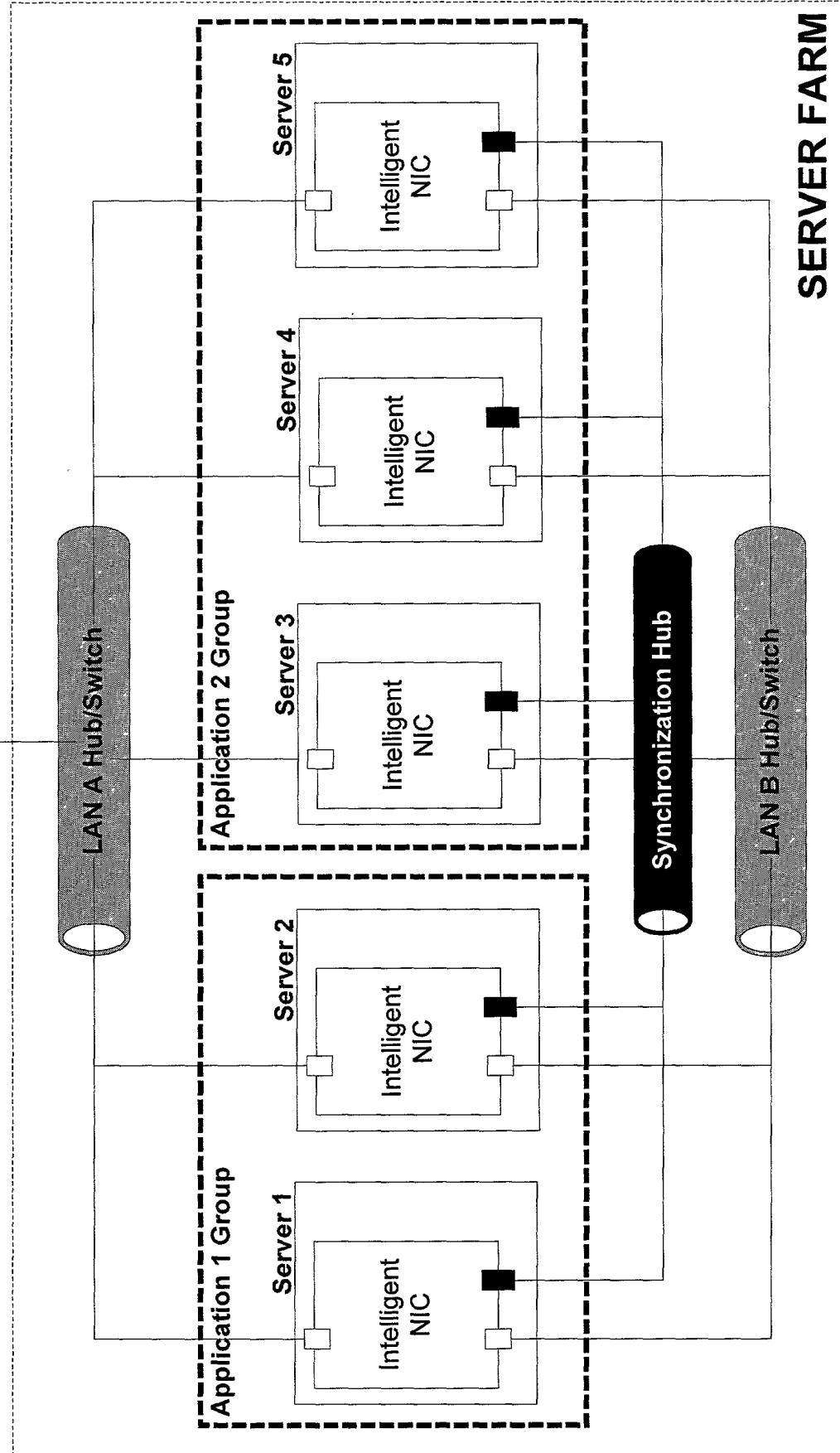


Figure 2C

Figure 2d

Internet Connection



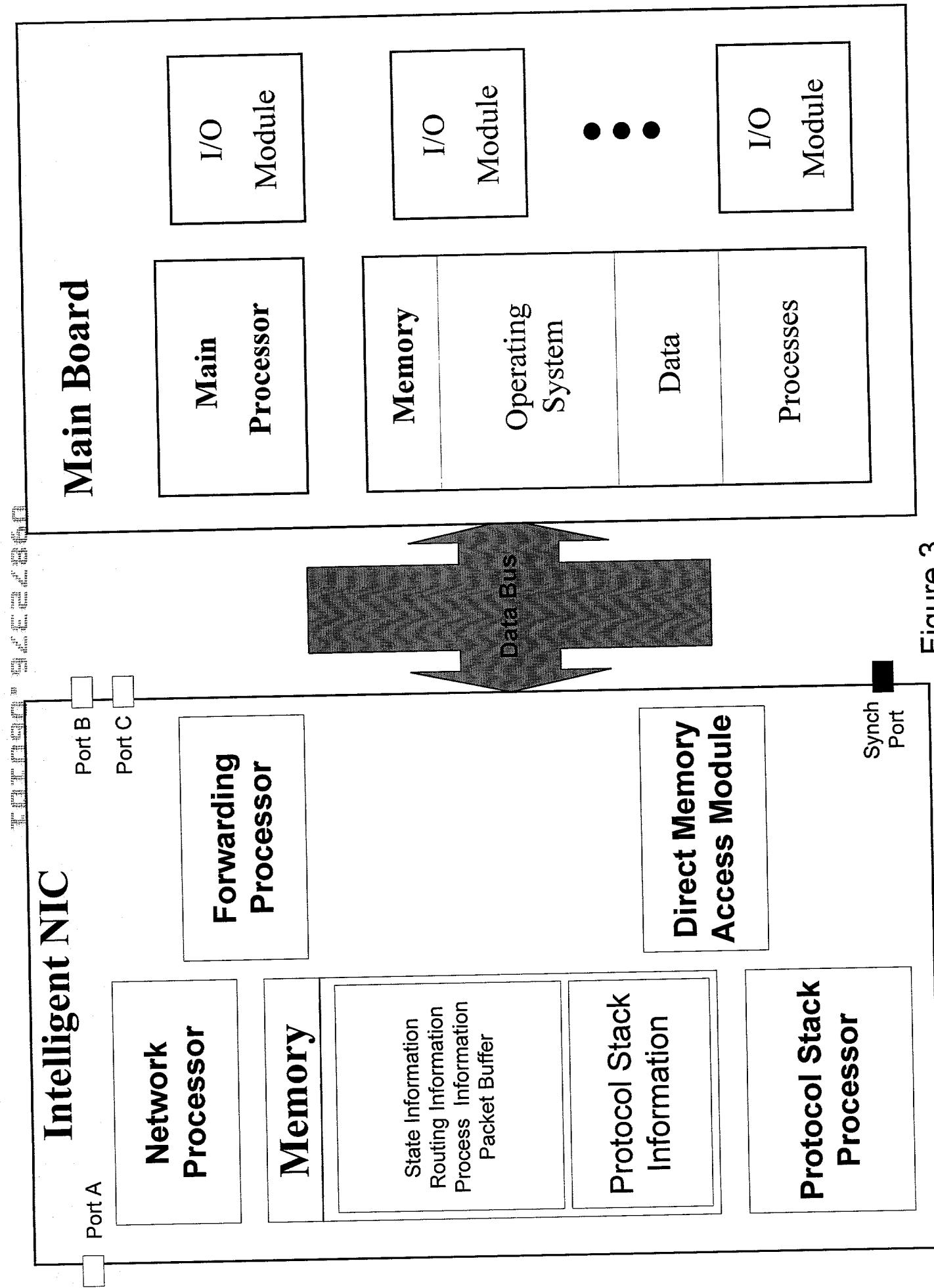


Figure 3

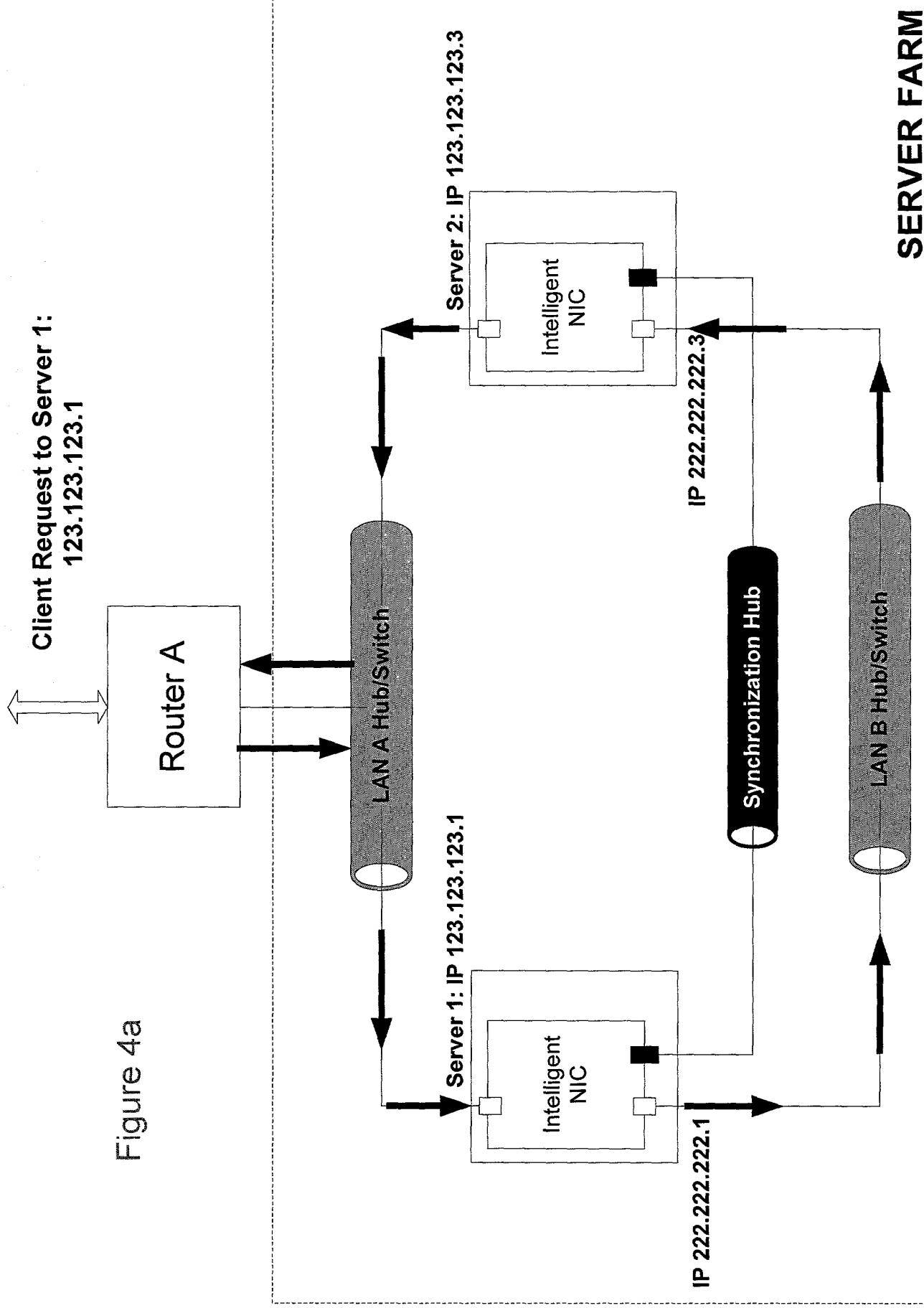


Figure 4a

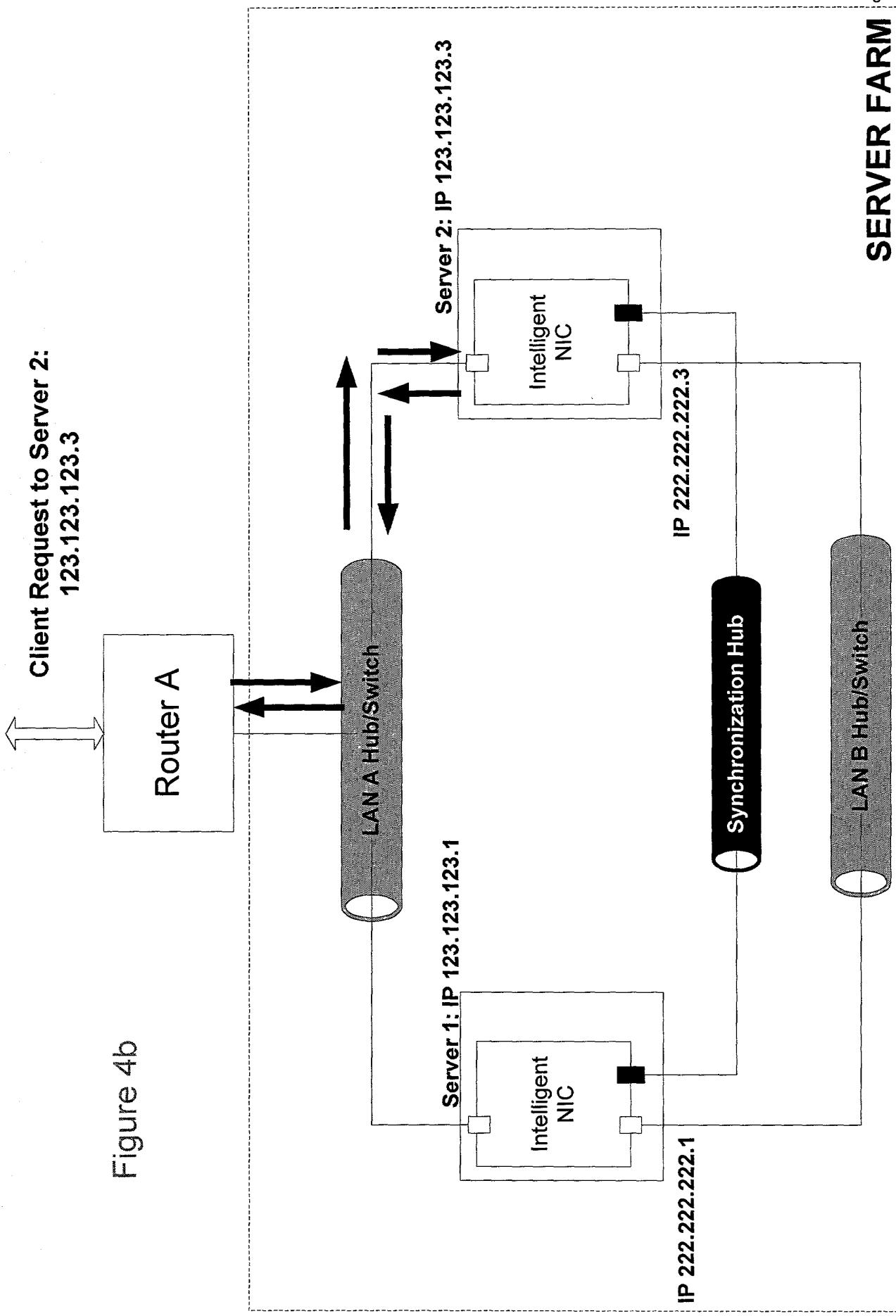
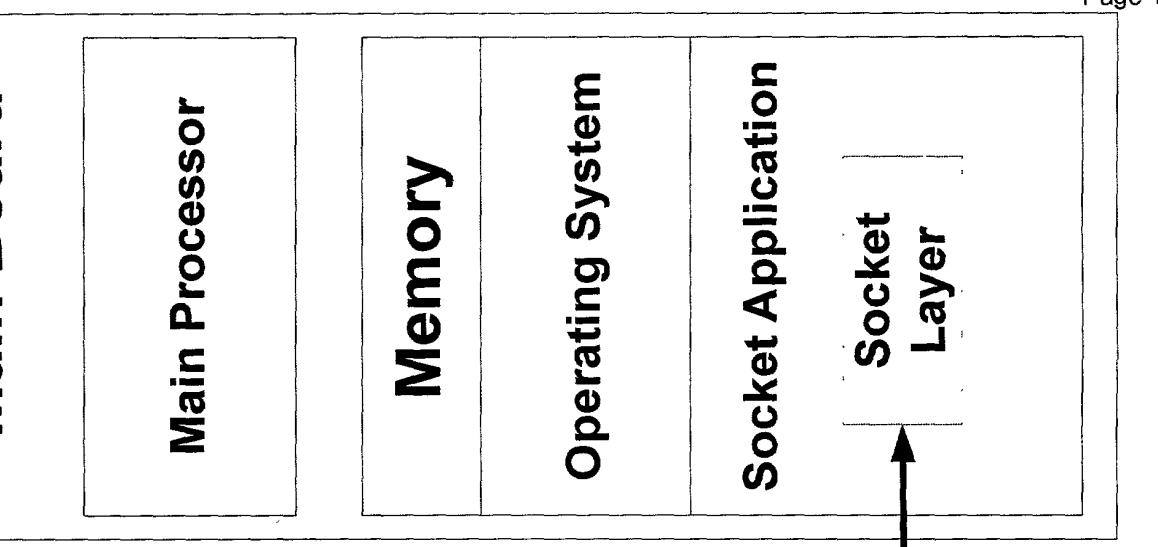


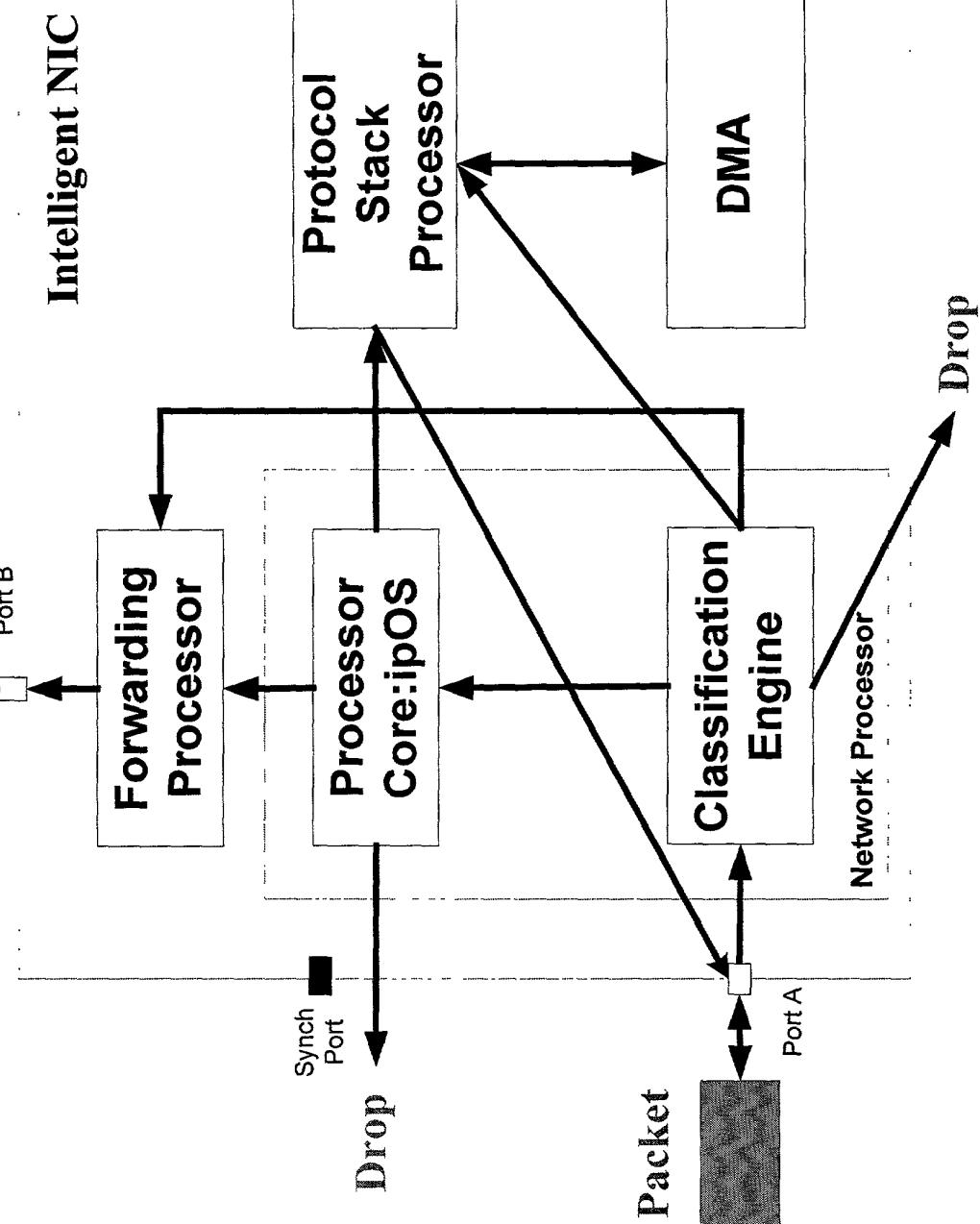
Figure 4b

Main Board

Figure 5a



Forward Packet



Main Board

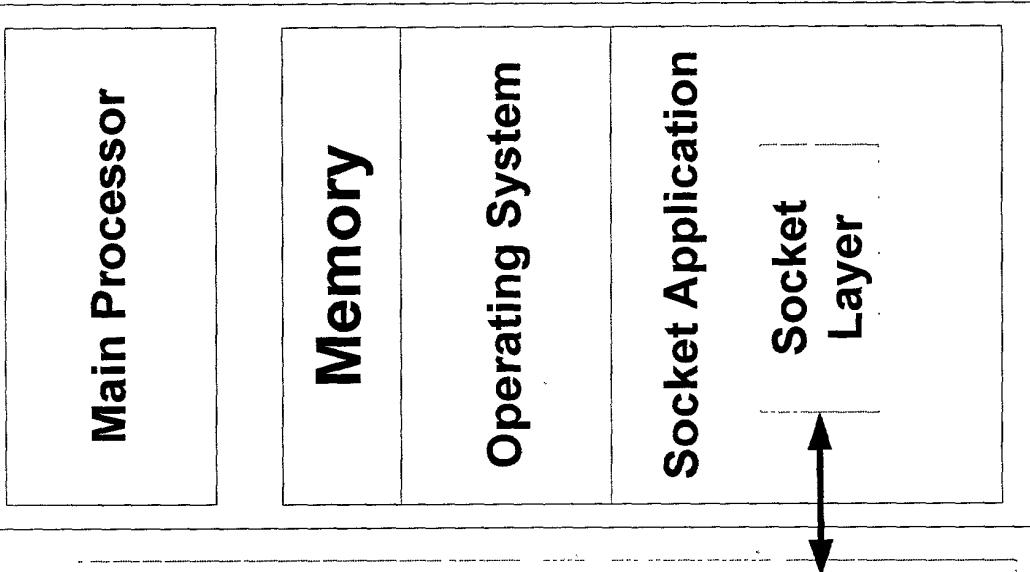
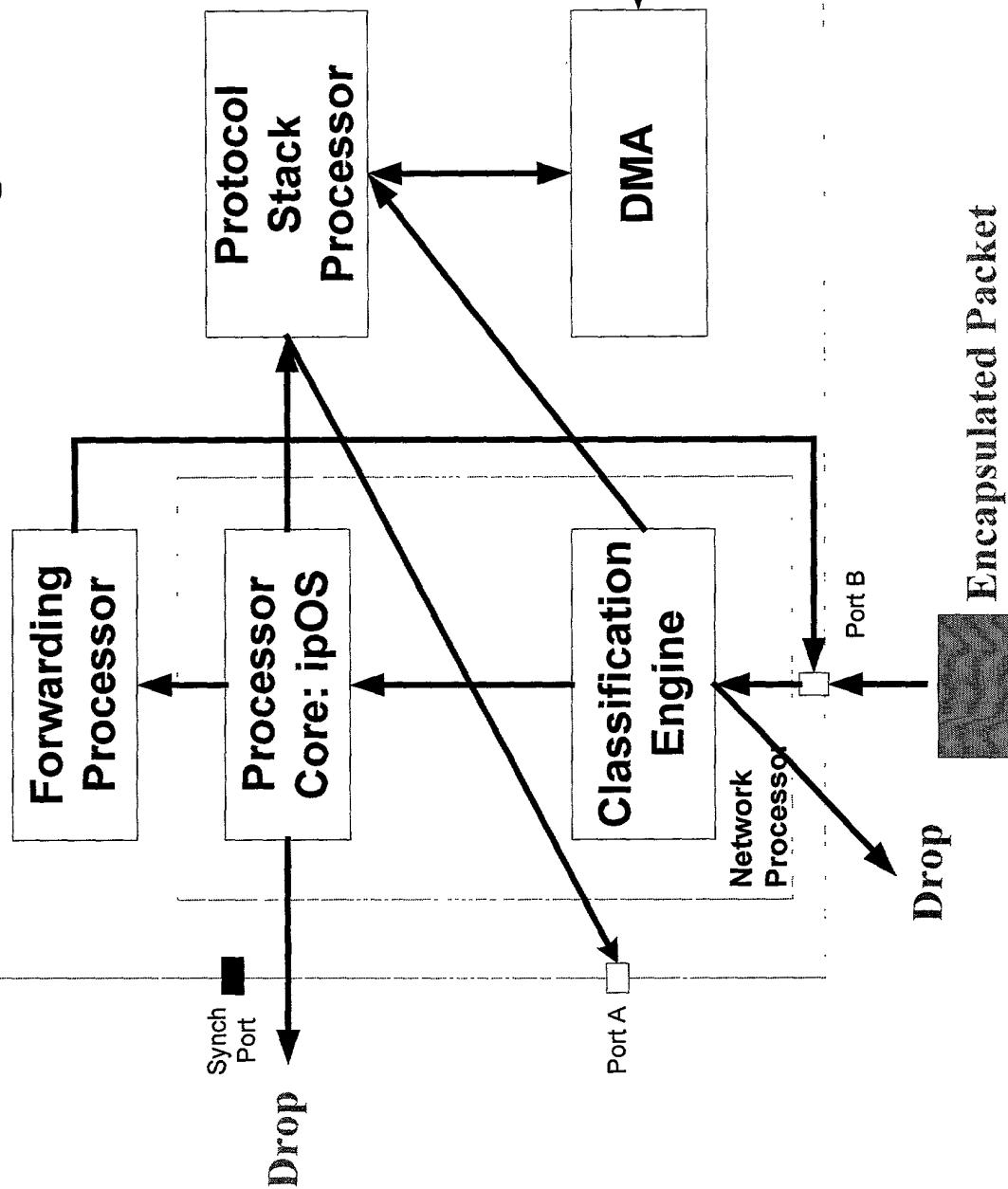


Figure 5b

Intelligent NIC



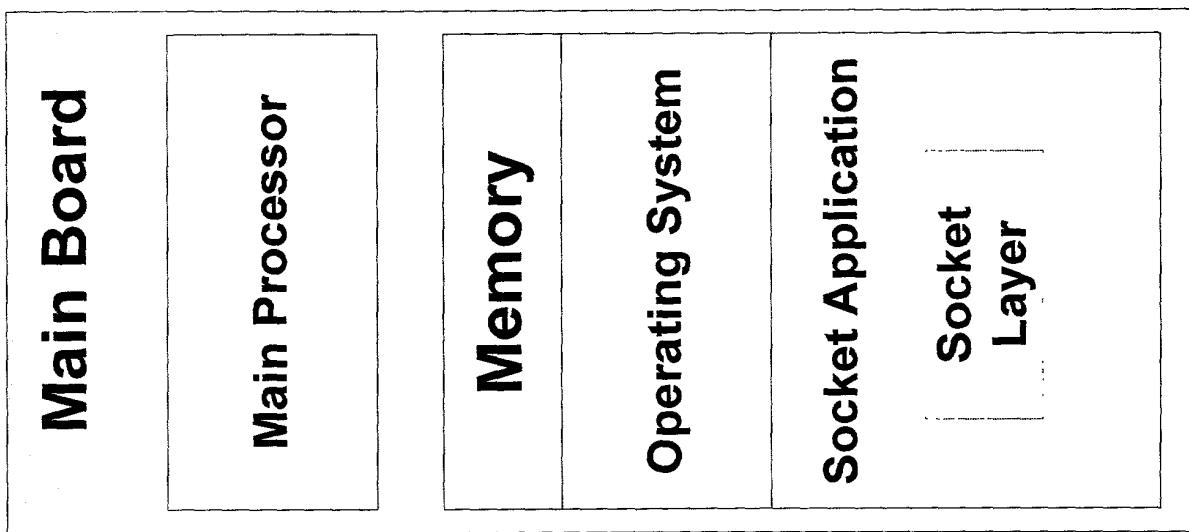
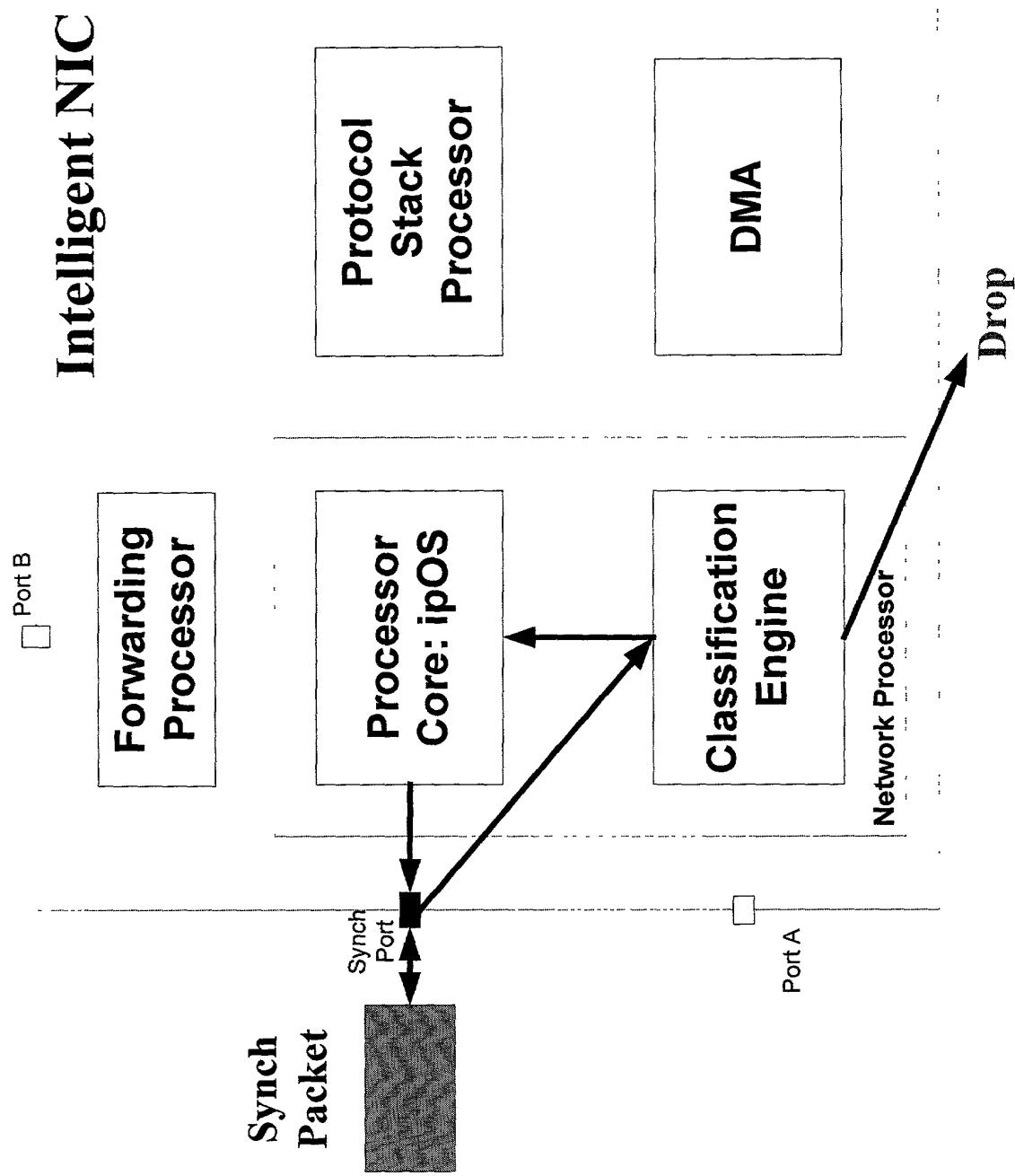


Figure 5c



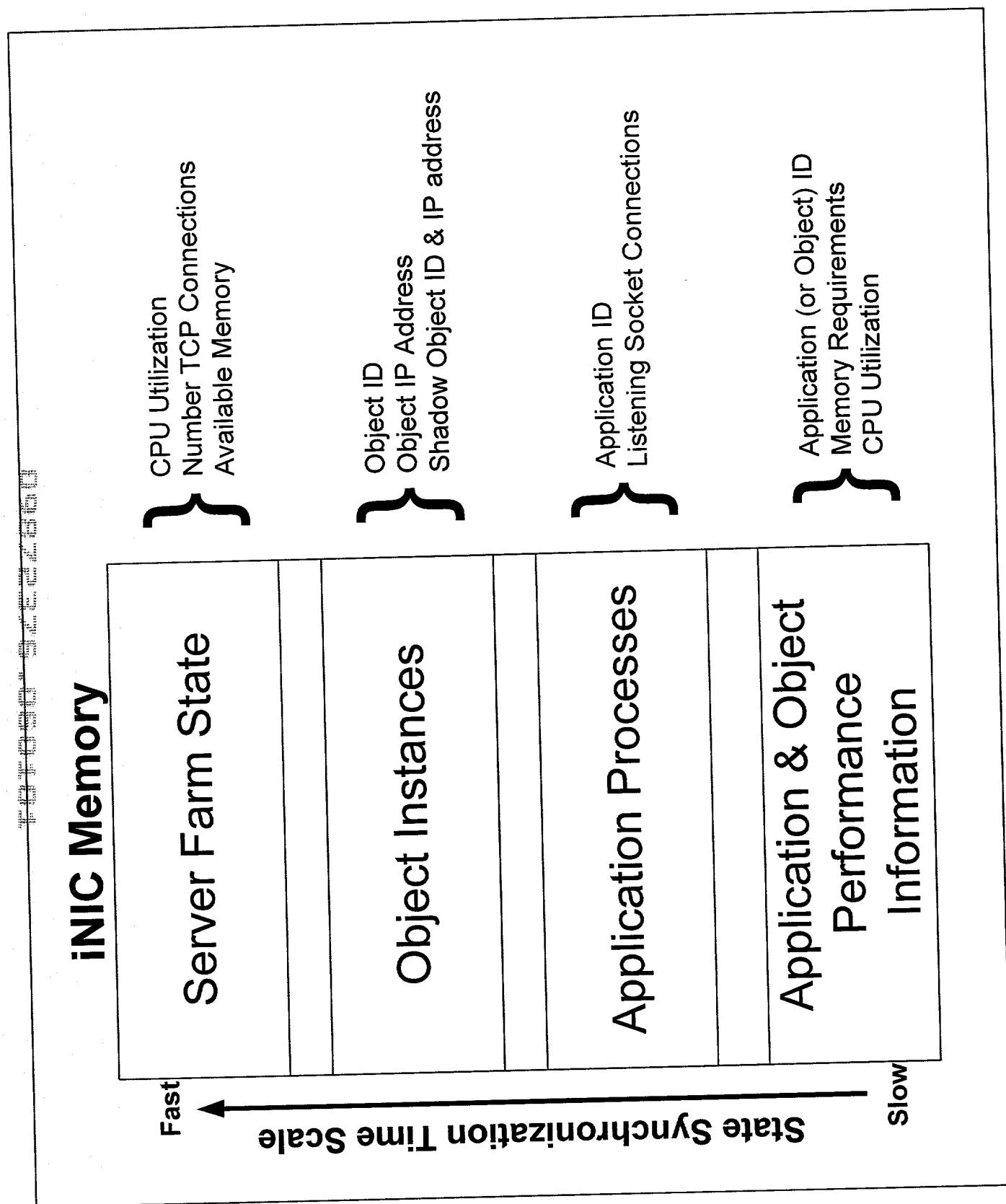
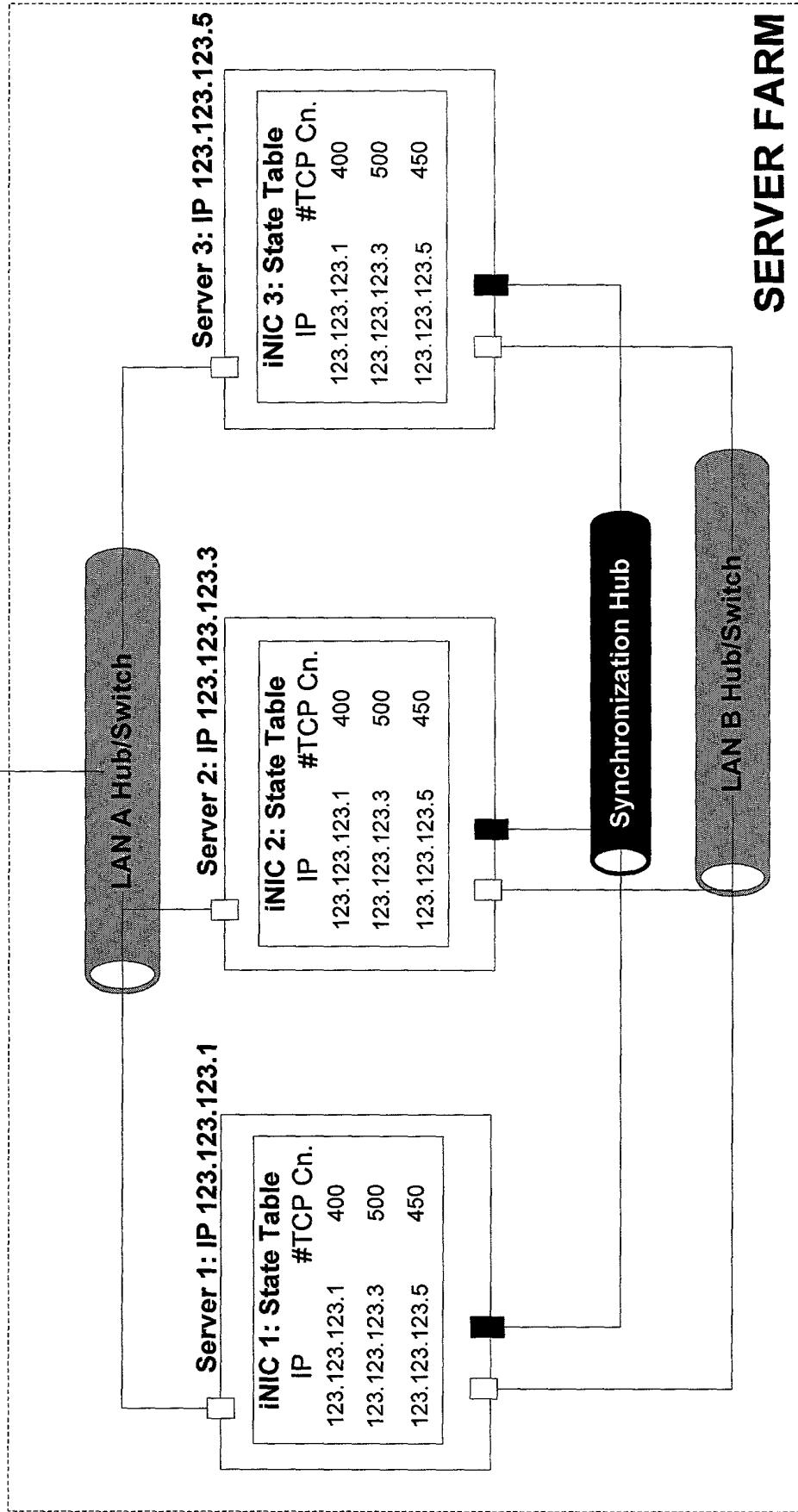


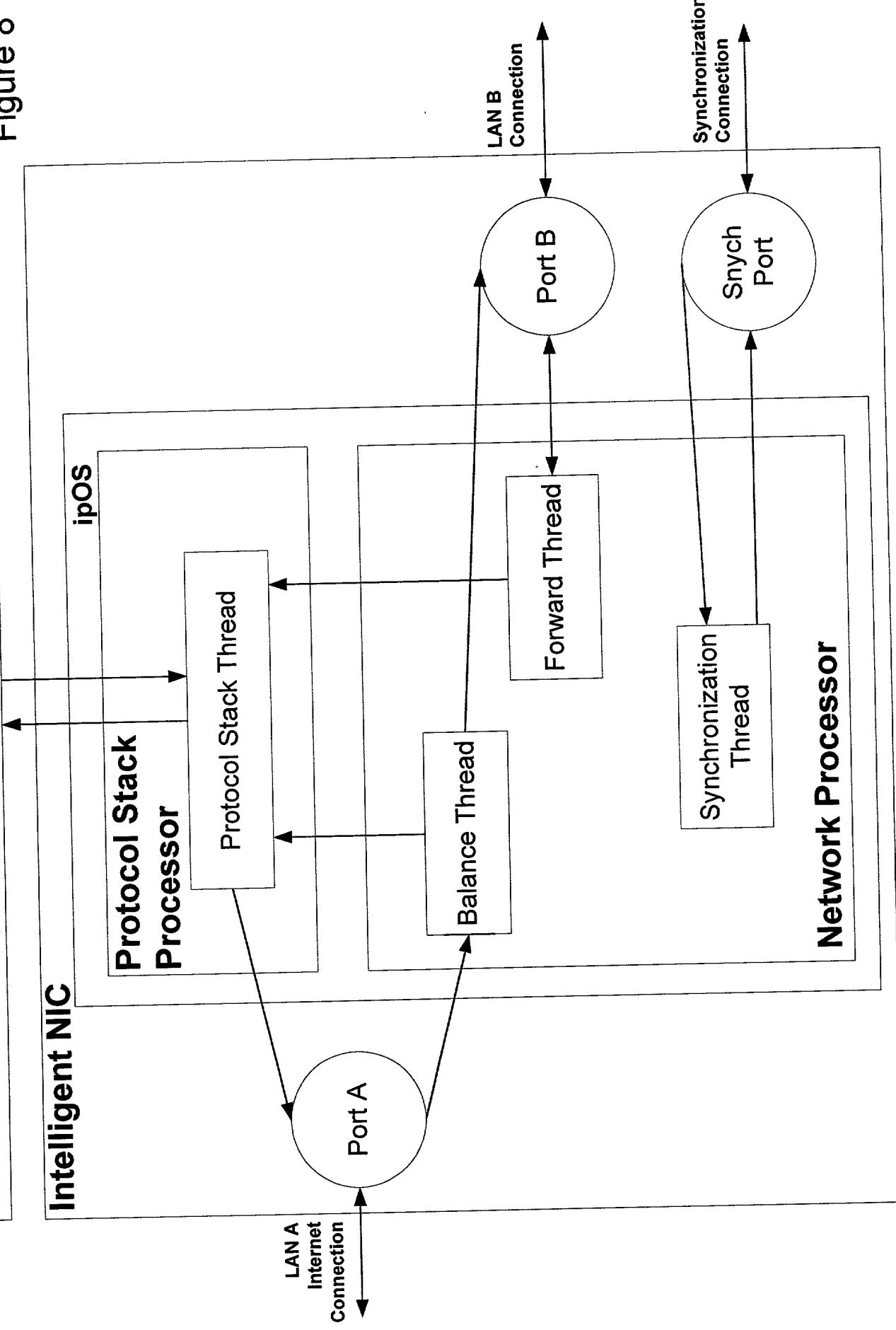
Figure 6

Figure 7
Internet Connection
Client Request to Server 1:
123.123.123.1



Main Board
Server Application

Figure 8



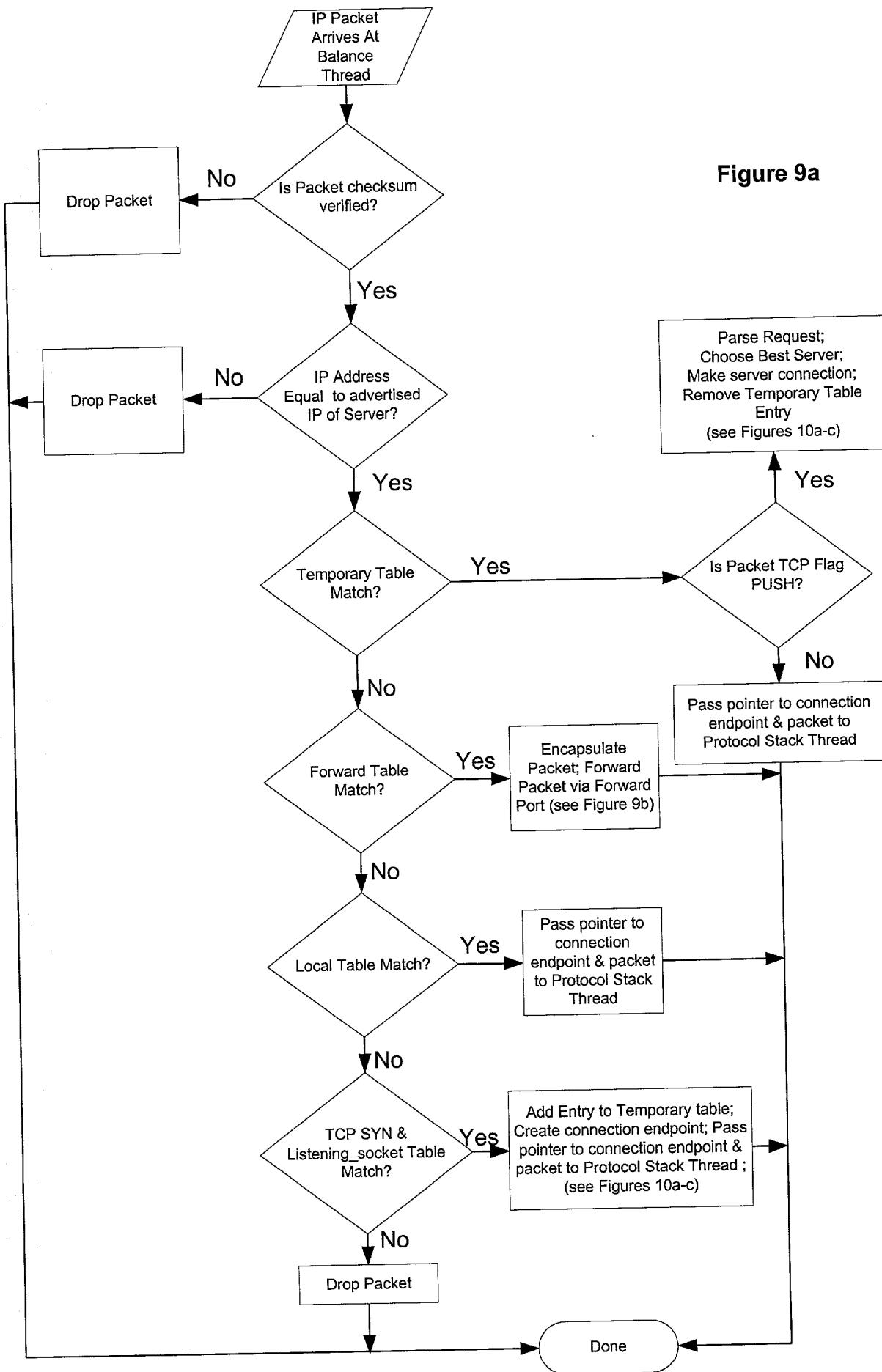


Figure 9a

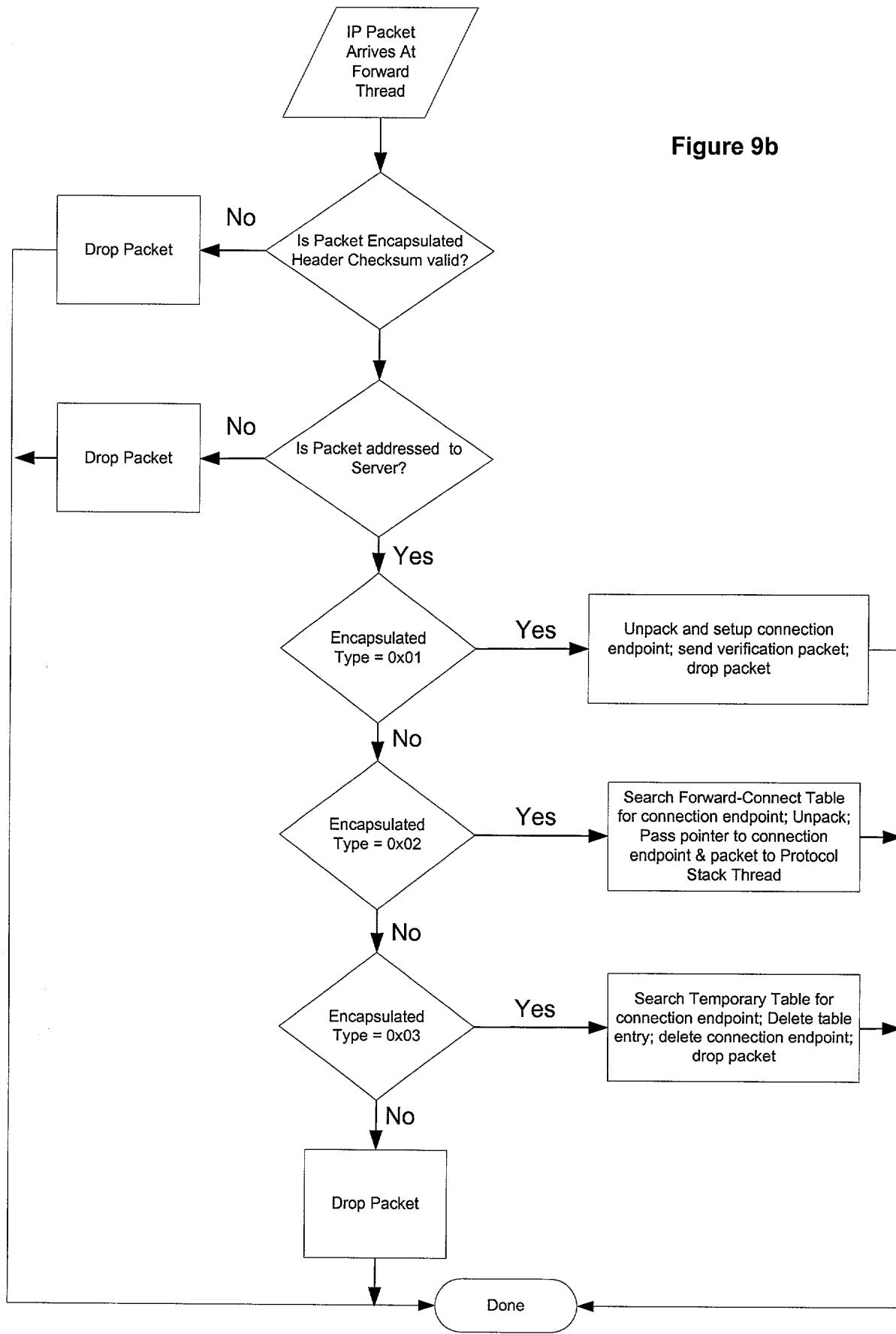
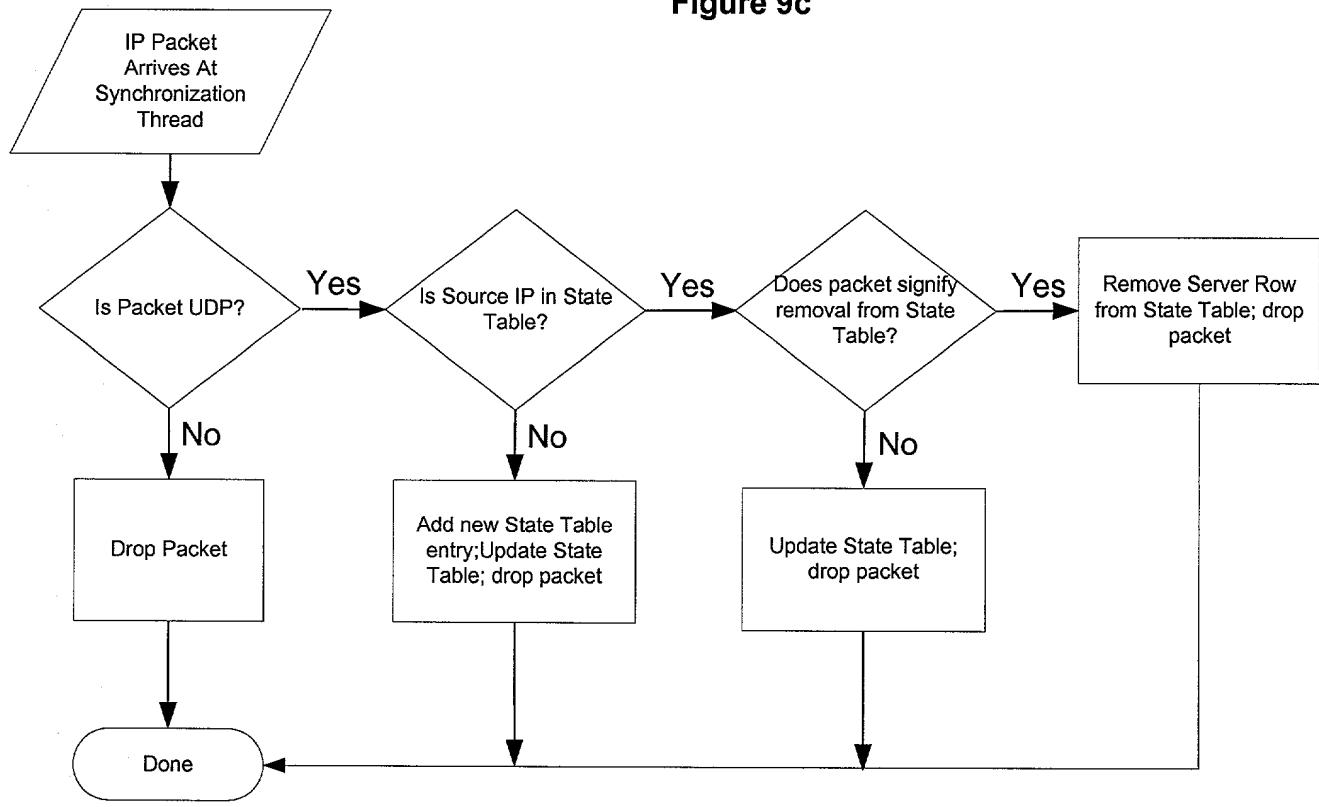
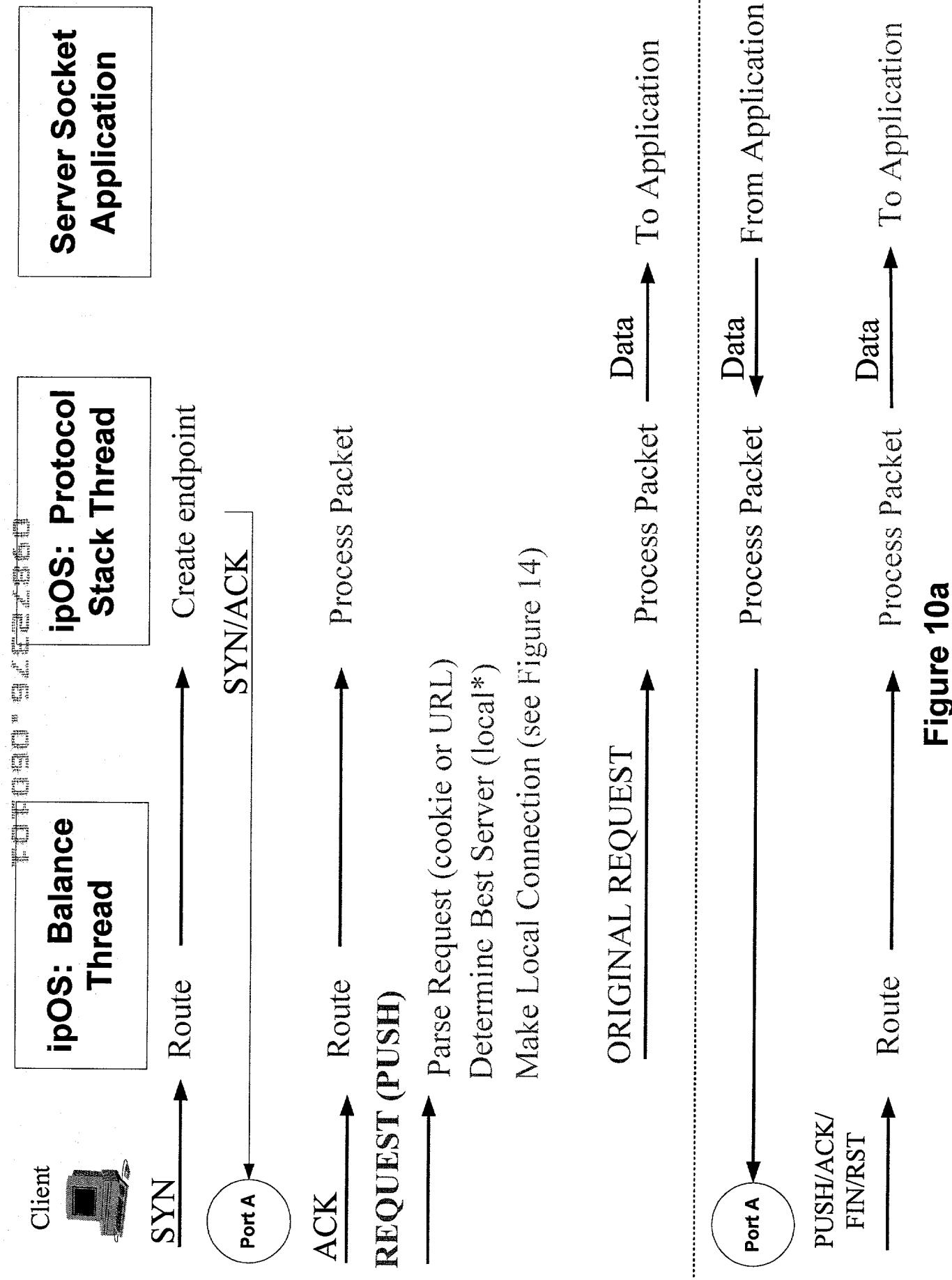
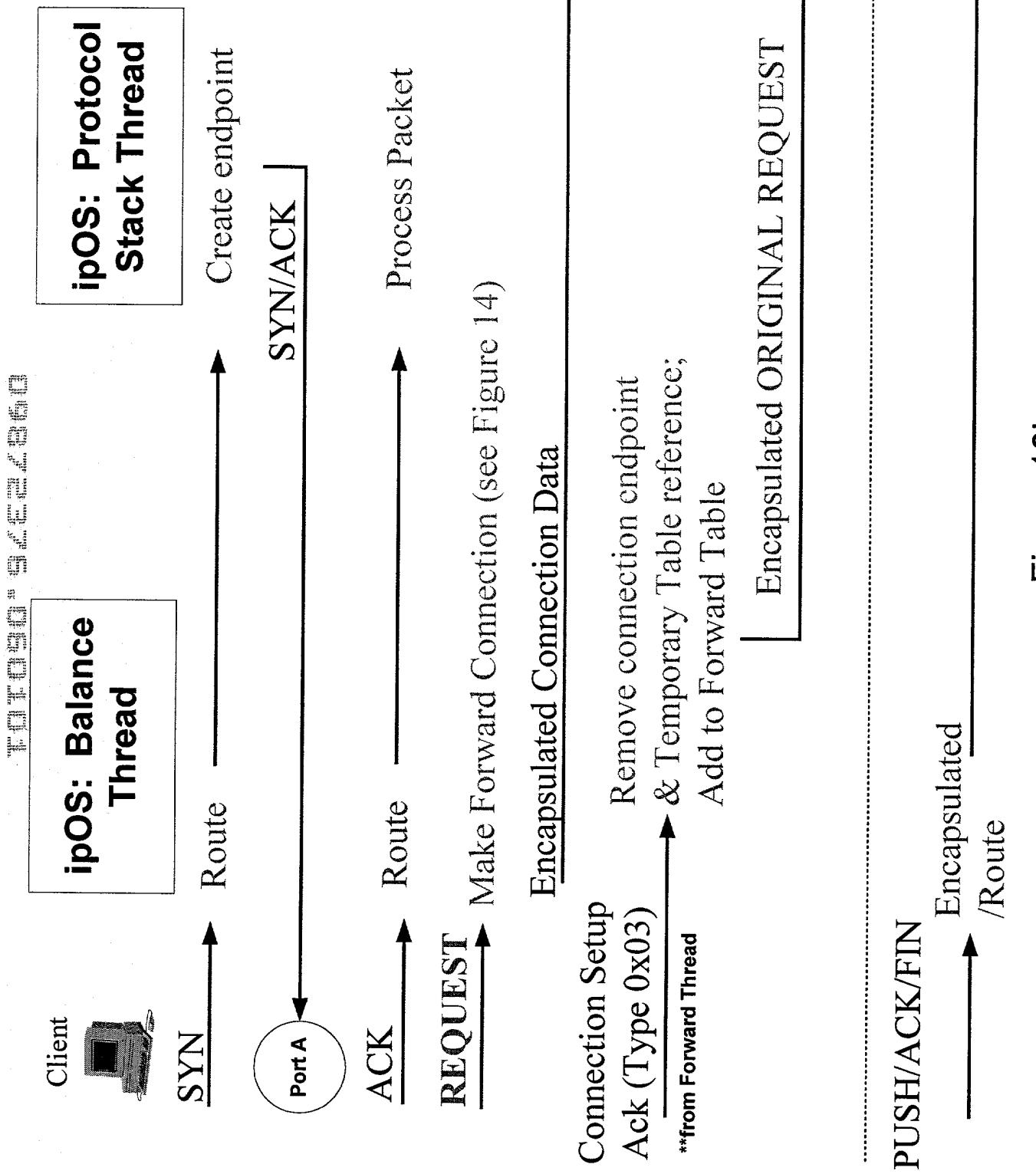


Figure 9c







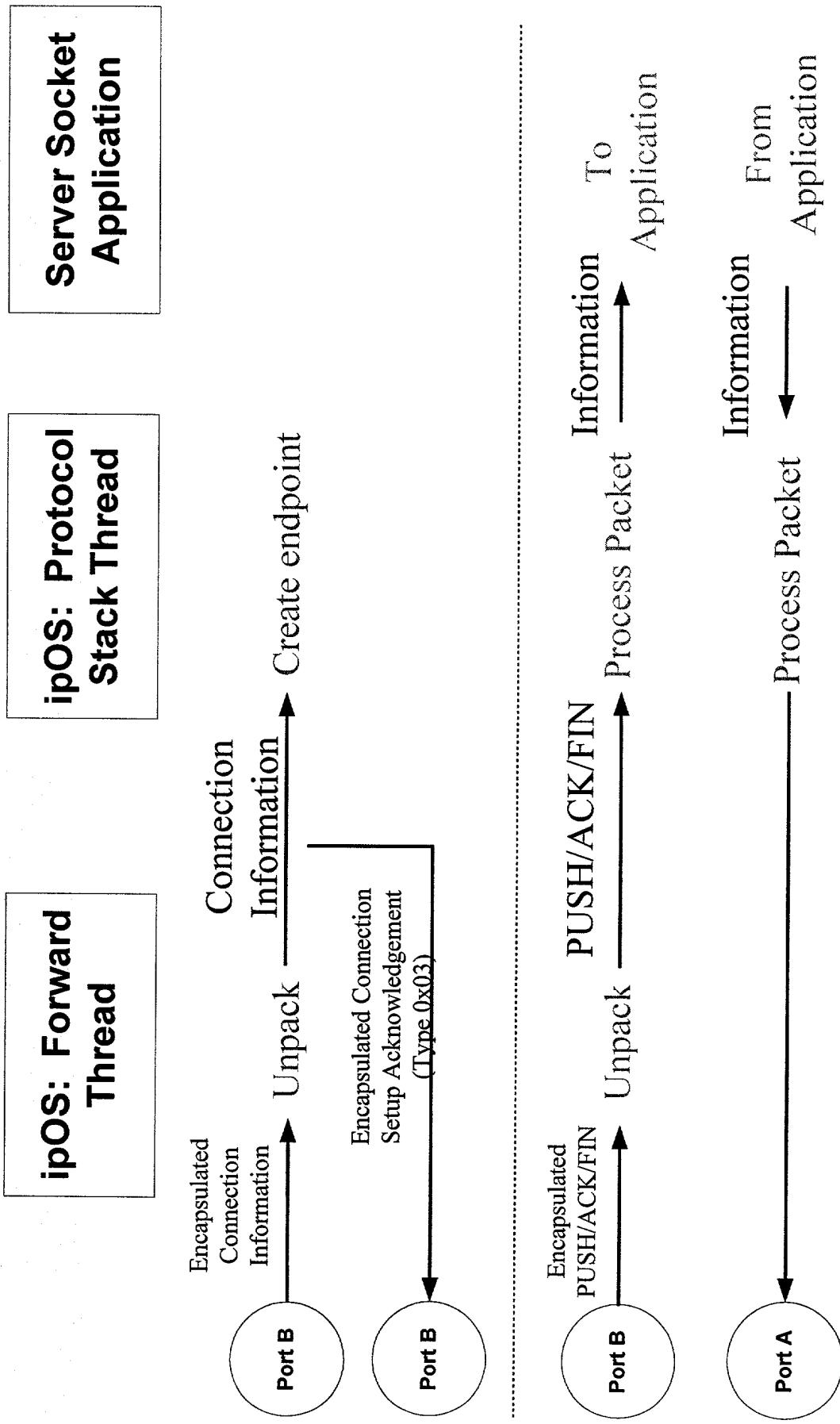


Figure 10c

Ethernet Encapsulation Header

MAC Destination Address	MAC Source Address	Type 0x007
6	6	2

Figure 11a
(Prior Art)

ipOS Encapsulation Header

Source IP	Source Port	Dest. IP	Dest. Port	Type	Protocol	Checksum
4	2	4	2	1	1	2

Figure 11b

ipOS Connection Information (UDP)

Server IP	Server Port
4	2

Figure 11c

ipOS Connection Information (TCP)

Server IP	Server Port	TCP Control Block Information
4	2	140

Figure 11d

ipOS TCP Connection Packet (Type=0x01; Protocol=0x01)

Ethernet Encap. Type =0x007	ipOS Encap. Header	TCP ipOS Connection Information
14	16	146

Figure 11e

ipOS UDP Connection Packet (Type=0x01; Protocol=0x02)

Ethernet Encap. Type =0x007	ipOS Encap. Header	UDP ipOS Connection Information
14	16	6

Figure 11f

ipOS TCP Packet (Type=0x02; Protocol=0x01)

Ethernet Encap. Type =0x007	ipOS Encap. Header	IP/TCP Packet
14	16	40 + Data

Figure 11g

ipOS UDP Packet (Type=0x02; Protocol=0x02)

Ethernet Encap. Type =0x007	ipOS Encap. Header	IP/UDP Packet
14	16	28 + Data

Figure 11h

ipOS Endpoint Migration Acknowledgement Packet (Type=0x03)

Ethernet Encap. Type =0x007	ipOS Encap. Header
14	16

Figure 11i

Forward Table

Key	Field	Description
Yes	Source IP Address	IP address of Client
Yes	Source TCP Port	TCP Port of Client
No	Destination IP Address	IP Address to Forward
No	Destination TCP Port	TCP Port to Forward

Local/Forward-Connect/Temporary Table

KEY	Field	Description
Yes	Source IP Address	Client IP address
Yes	Source Port	Client TCP Port
Yes	Destination IP Address	Endpoint IP Address
Yes	Destination Port	Endpoint TCP Port
No	Endpoint Reference	Reference to Connection Endpoint

Server State Table

Key	Field	Description
Yes	Server IP Address	Server
No	Number TCP Connections	TCP Established Connections
No	CPU utilization	Main board CPU utilization
No	Available memory	Unused memory on Main Board
No	Available Bandwidth	Unused Bandwidth Capacity

Listening Sockets Table

Key	Field	Description
Yes	Server IP Address	Server
Yes	TCP Port	Advertised TCP Port
No	Process	Application process advertising IP/Port

Application Information Table

Key	Field	Description
Yes	Process ID	Application identification
No	Process memory requirements	Memory required to run application
No	Process CPU Utilization	Measure of application CPU utilization

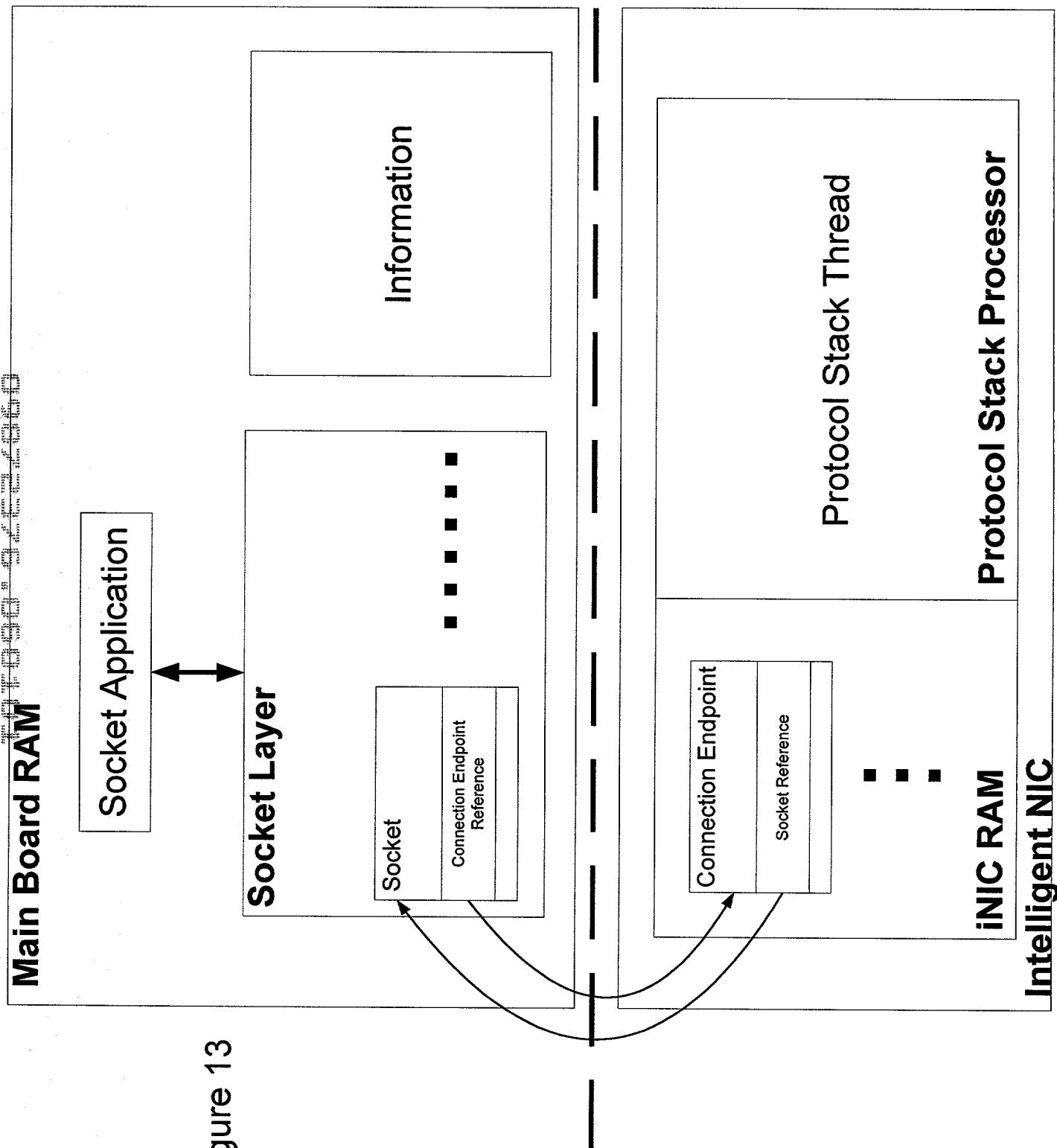
URL Map Table

Key	Field	Description
Yes	URL	Universal Resource Locator
Yes	Server IP Address	IP address of associated server

Cookie Map Table

Key	Field	Description
Yes	Cookie ID	Cookie Identification tag
No	Server IP Address	IP address of associated server

Figure 12



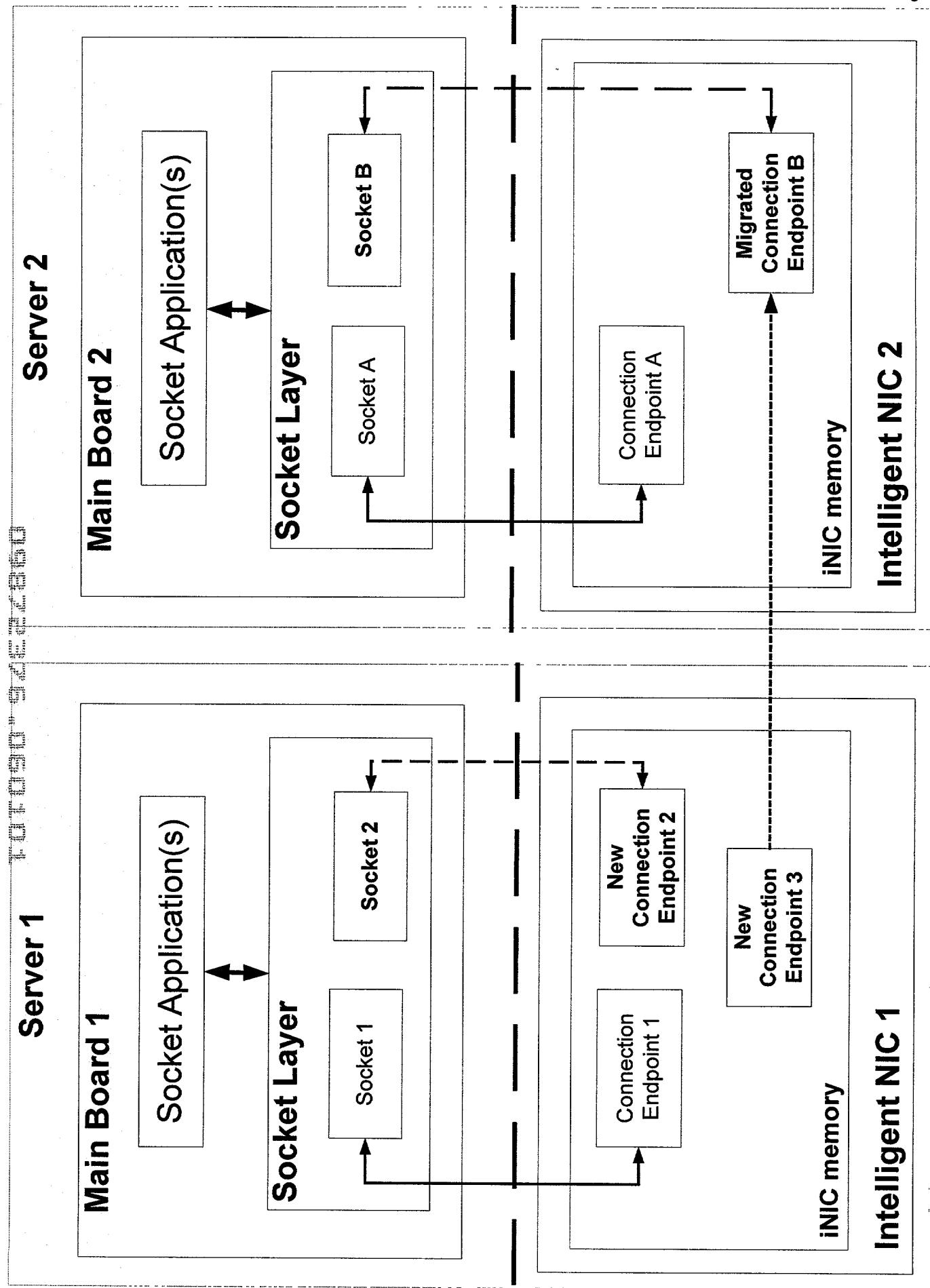


Figure 14

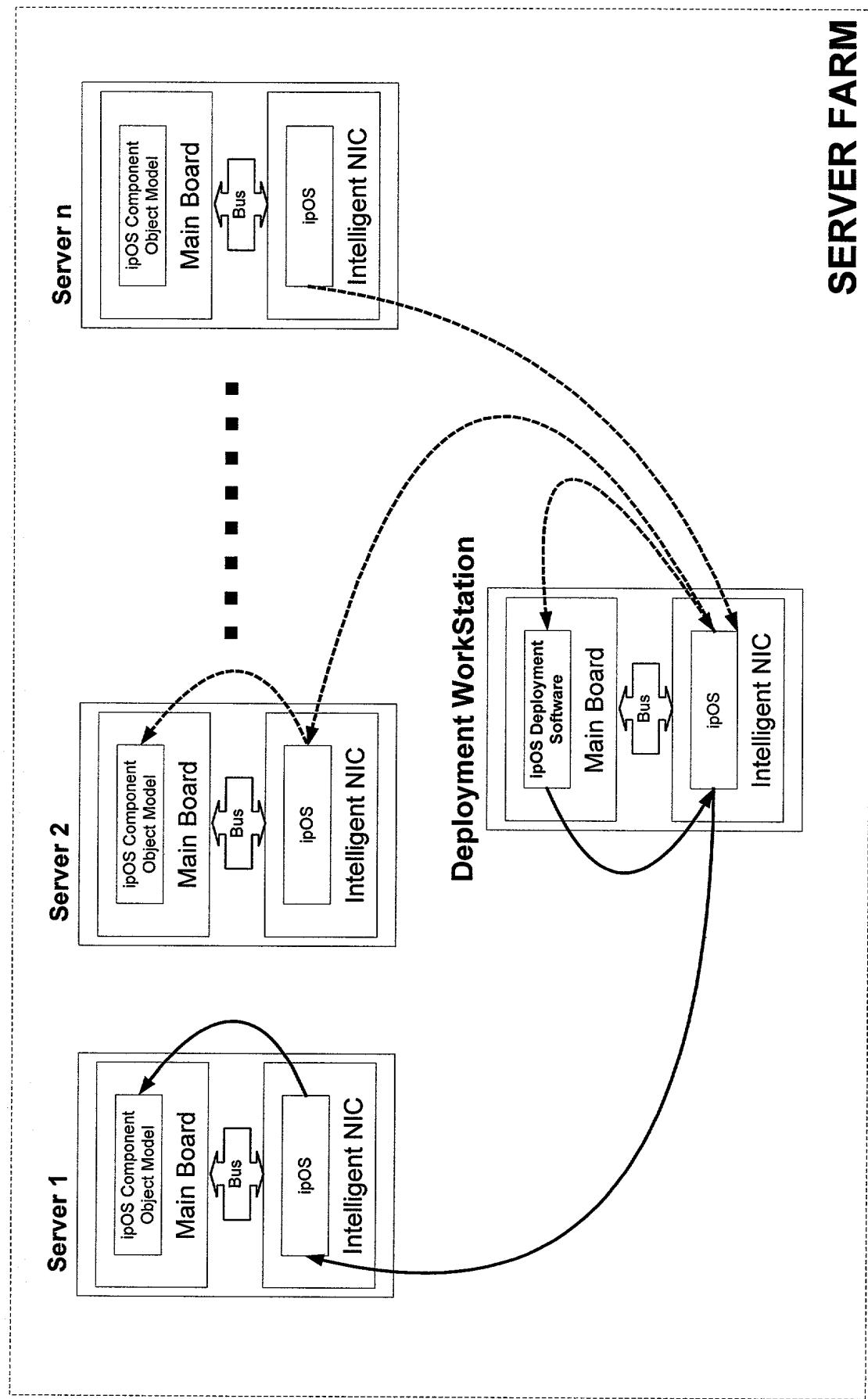


Figure 15

Figure 16

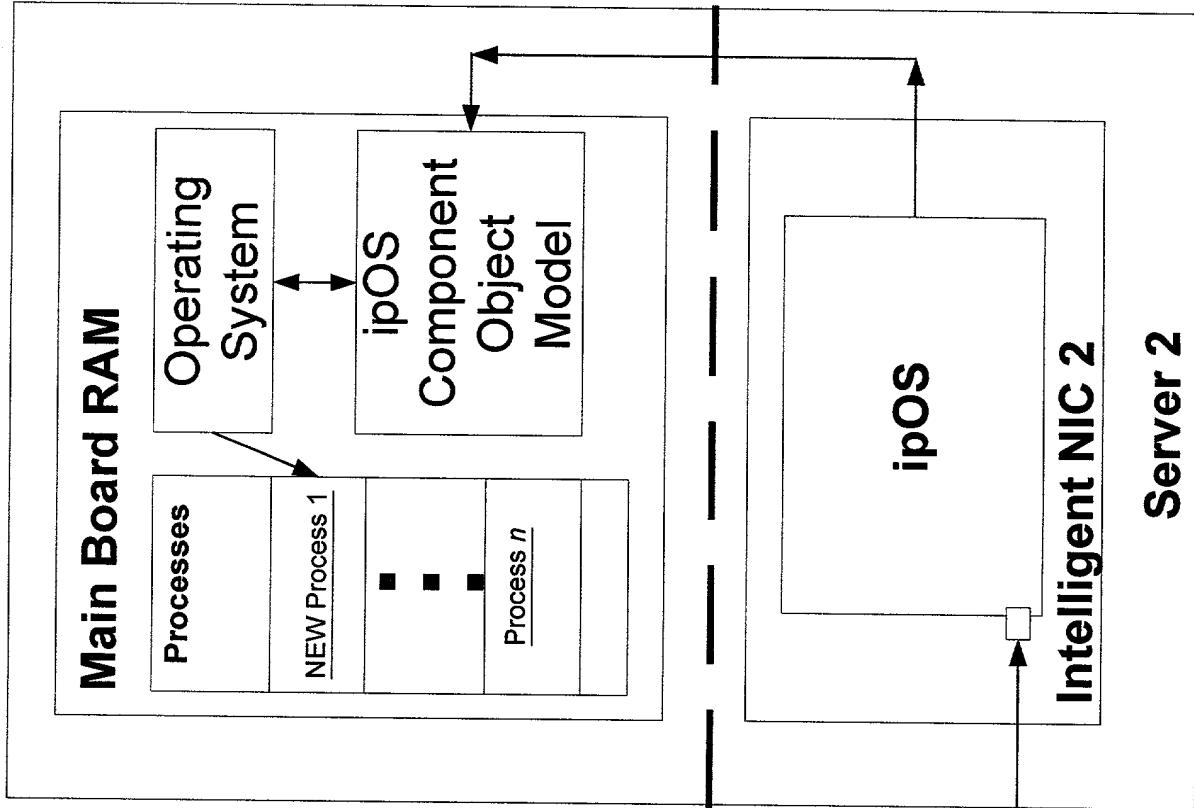
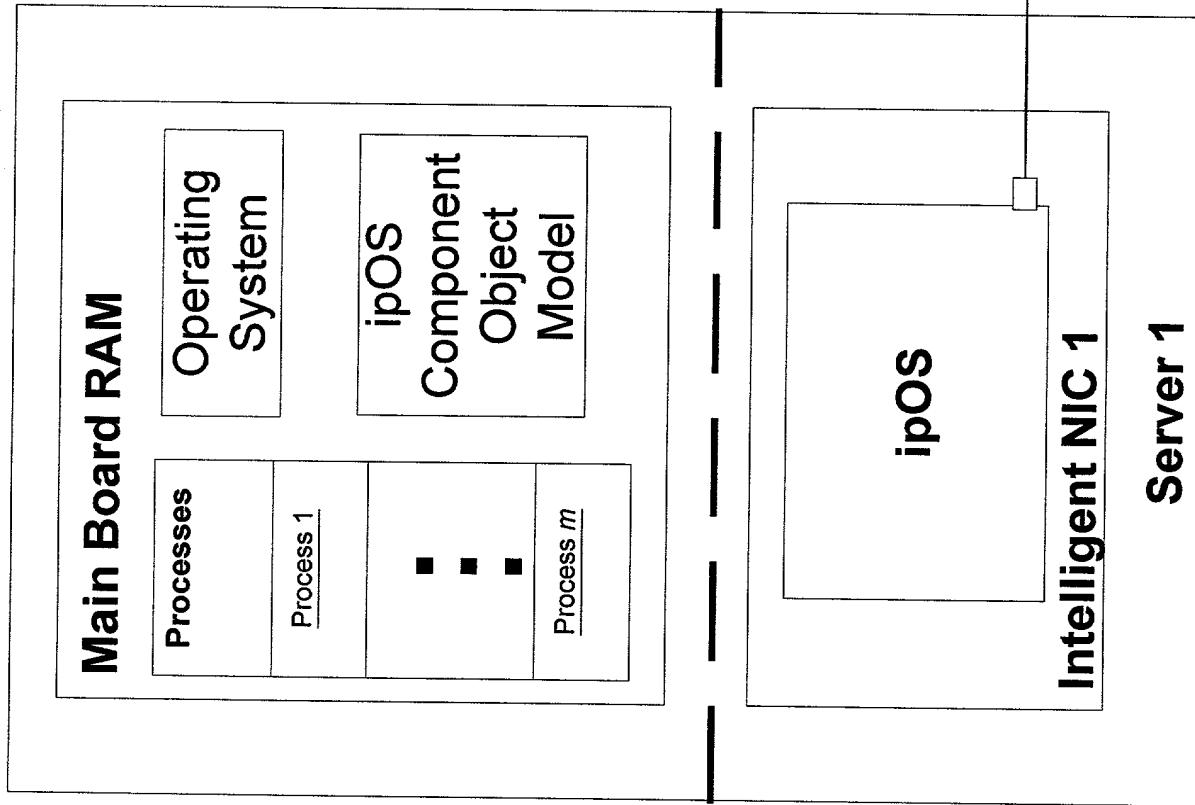


Figure 17

